

## CLAIMS

What is claimed is:

- 1 1. A method comprising:  
2 receiving a message indicating that a destination port of a multiservice  
3 network is congested; and  
4 reducing incoming traffic to the congested port to a guaranteed  
5 bandwidth of traffic until the destination port is uncongested.
- 1 2. The method of claim 1 wherein the network is selected from the group  
2 consisting of:  
3 Asynchronous Transfer Mode (ATM) network, Frame Relay (FR)  
4 network, voice network, Circuit Emulation Service (CES) network, and Internet  
5 Protocol (IP) network.
- 1 3. The method of claim 2 further comprising  
2 scheduling a grant for a virtual output queue associated with the  
3 congested destination port.
- 1 4. The method of claim 3 wherein scheduling a grant further comprises

2 determining whether a theoretical departure time for at least one virtual  
3 output queue is less than a current time.

1 5. The method of claim 4 wherein scheduling a grant further comprises  
2 scheduling a grant for the virtual output queue having the smallest  
3 theoretical departure time.

1 6. The method of claim 4, wherein scheduling a grant further comprises  
2 scheduling a grant to one of the virtual output queues associated with  
3 the congested destination port using either a round robin scheduling method or  
4 a priority based scheduling method.

1 7. An apparatus comprising:  
2 means for receiving a message indicating that a destination port of a  
3 multiservice is congested; and  
4 means for reducing incoming traffic to the congested port to a  
5 guaranteed bandwidth of traffic until the destination port is uncongested.

1 8. The apparatus of claim 7 wherein the network is selected from the group  
2 consisting of:

3 Asynchronous Transfer Mode (ATM) network, Frame Relay (FR)  
4 network, voice network, Circuit Emulation Service (CES) network, and Internet  
5 Protocol (IP) network.

1 9. The apparatus of claim 8 further comprising  
2 means for scheduling a grant for a virtual output queue.

1 10. The apparatus of claim 9 wherein said means for scheduling a grant  
2 further comprises  
3 means for determining whether a theoretical departure time for at least  
4 one virtual output queue is less than a current time.

1 11. The apparatus of claim 10 wherein said means for scheduling a grant  
2 further comprises  
3 means for scheduling a grant for the virtual output queue having the  
4 smallest theoretical departure time.

1 12. The apparatus of claim 10, wherein said means for scheduling a grant  
2 further comprises  
3 means for scheduling a grant to a virtual output queue using either a  
4 round robin scheduling method or a priority based scheduling method.

1 13. A computer readable medium having instructions which, when executed  
2 by a processing system, cause the system to:  
3 receive control cells indicating that a destination port of a multiservice  
4 network is congested; and  
5 reduce incoming traffic to the congested port to a guaranteed bandwidth  
6 of traffic until the destination port is uncongested.

1 14. The medium of claim 13 wherein the network is selected from the group  
2 consisting of:  
3 Asynchronous Transfer Mode (ATM) network, Frame Relay (FR)  
4 network, voice network, Circuit Emulation Service (CES) network, and Internet  
5 Protocol (IP) network.

1 15. The medium of claim 14 wherein the executed instructions further cause  
2 the system to schedule a grant for a virtual output queue.

1 16. The medium of claim 15 wherein the executed instructions further cause  
2 the system to schedule a grant further comprises  
3 determining whether a theoretical departure time for at least one virtual  
4 output queue is less than a current time.

1 17. The medium of claim 16 wherein the executed instructions further cause  
2 the system to schedule a grant further comprises  
3 scheduling a grant for the virtual output queue having the smallest  
4 theoretical departure time.

1 18. The medium of claim 16, wherein the executed instructions further cause  
2 the system to schedule a grant further comprises  
3 schedule a grant to a virtual output queue using either a round robin  
4 scheduling method or a priority based scheduling method.

1 19. An apparatus comprising:  
2 a receiver to receive a message indicating that a destination port of a  
3 multiservice network is congested; and  
4 a traffic manager to reduce incoming traffic to the congested port to a  
5 guaranteed bandwidth of traffic until the destination port is uncongested.

1 20. The apparatus of claim 19 wherein the network is selected from the  
2 group consisting of:  
3 Asynchronous Transfer Mode (ATM) network, Frame Relay (FR)  
4 network, voice network, Circuit Emulation Service (CES) network, and Internet  
5 Protocol (IP) network.

1 21. The apparatus of claim 20 further comprising  
2 a scheduler to schedule a grant for a virtual output queue associated  
3 with the congested destination port.

1 22. The apparatus of claim 21 further comprising  
2 a calculator to determine whether a theoretical departure time for at least  
3 one virtual output queue is less than a current time.